

## CLAIMS

What is claimed is:

1. An active head restraint arrangement for passenger seats in motor vehicles providing upward and forward protective motion for occupants head and neck in

5 instances of rear impact comprising:

a head restraint cushion;

at least one head restraint post extending from said head restraint cushion and into the interior of said passenger seats; and

10 a flip-up assembly associated with said head restraint post beneath said head restraint cushion.

2. The active head restraint arrangement as in claim 1, wherein said flip-up assembly further comprises a frame attached to a spring-loaded release arm, a latch with teeth, top flip-up member, a push rod, a middle flip-up member, a pivot arm, and a lower flip-up member.

15 3. The active head restraint arrangement as in claim 2, wherein said frame is connected to a trigger mechanism associated with said passenger seat or the motor vehicle and upon activation of said trigger mechanism said frame disengages from said spring loaded release arm; said spring loaded release arm rotates and enables upward movement of said push rod; said spring loaded release arm is thereby locked to a stop;

20 and movement of said push rod enables said pivot arm to release said top flip-up member, said middle flip-up member; and said lower flip-up member.

4. The active head restraint arrangement as in claim 3, wherein said spring-loaded release arm is spring-loaded counterclockwise.

5. The active head restraint arrangement as in claim 3, wherein upon release of said top flip-up member, said middle flip-up member, and said lower flip-up member said flip-up assembly moves upward and forward.

6. The active head restraint arrangement as in claim 3, wherein upon full  
5 actuation and release of said top flip-up member, said middle flip-up member, and said lower flip-up member said spring loaded release arm locked to a stop snaps back and locks into latch with teeth.

7. The active head restraint arrangement as in claim 3, wherein cross member of said limits movement of spring loaded release arm.

10 8. The active head restraint arrangement as in claim 3, wherein activated said flip-up assembly is reset into deactivated position after full actuation upon impact.

9. The active head restraint arrangement as in claim 8, wherein activated said flip-up assembly is reset into a deactivated position manually or with the aid of a tool.